

Advancing the One Health Paradigm Shift: Updates and Challenges

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Abstract

In recent days Ebola has and is giving the world an important one health lesson. Ecologists have repeatedly pointed out that human impact on the environment (via deforestation, development, etc.) is bringing people and wildlife into ever increasing contact as evidenced by Nipah, SARS and now Ebola virus outbreaks. Additionally, the world must discover how to feed the projected 9 billion people that will soon populate it without causing further global destruction. This requires conjoined, sustained and simultaneous attention to many arenas such as: soil and plant health, antimicrobial resistance, zoonotic diseases, secure social, economic and political systems, advances in comparative research and education, to name a few. The cross disciplinary approach known as One Health really is a "ray of hope" for the future, our only way forward. Continuing in our current status quo 'silo' systems will not sustain us but will further us along a destructive trajectory. This presentation will describe several areas of One Health, the critical need for and process of connecting the many passionate One Health stakeholders, and share an update on One Health efforts across the U.S. and beyond, bringing us together in organized actions needed to make One Health ways of thinking the 'default way of doing business'. It is up to us, as One Health stakeholders and leaders from all disciplines, to make it happen.

Discussion Points

#1

There is always something that each of us as individuals (who see what is happening and what is needed to bring One Health thinking into the mainstream of all systems) can do

#2

We must be willing to get out of our comfort zones and seek to engage not only professionals from disciplines outside our own, but policy and law makers, social scientists, and agriculturalists

#3

Making the One Health "Ray of Hope" a reality for future generations is up to us, today's stakeholders. We can make a difference by engaging with each other, law and policy makers and other professionals. We must and will continuously explore how to bring about the needed paradigm shifts at all levels of thinking.

One Health in the U.S. and Beyond -'Connect, Create, Educate''

Many 'hotspots' of One Health Activity have formed in the U.S. and around the globe. Some will be highlighted in this talk but a comprehensive overview of all these active programs is beyond the scope of this presentation. Briefly, significant One Health efforts in academic settings are ongoing at: University of California, Texas A&M University, University of Florida, Duke University, University of Washington, Ross University, Washington State University, University of Minnesota, Colorado State University, Tufts University, University of Georgia, Ohio State University, North Carolina State University, Iowa State University, Pennsylvania

State and the University of Pennsylvania, Mississippi State University, University of Illinois, Kansas State University, Michigan State University, Georgetown University, Princeton University, Oklahoma State University, South Dakota State University, Lincoln Memorial University, Virginia Tech University, and University of Wisconsin, to name a few.

One Health interactions and programs at the U.S. State government levels are ongoing in North Carolina, Kentucky, Tennessee, Maryland, Massachusetts, New Mexico, St Georges University, and I am sure there are others that I am not yet aware of.

Other, non-academic One Health initiatives are ongoing at One Health Academy in Washington D.C., St. Louis Zoo, Animal Medical Center in New York, and Zoobiquity Conferences. Information about others are welcome. Corporations with active One Health focus include Zoetis Animal Health.

There have been three recognized International One Health Conferences with the first in Australia in 2011, the second in Thailand in 2013. Active International One Health programs in education, research and at government levels, as evidenced at the recent 3rd International One Health Congress in Amsterdam, are ongoing in India, Sweden, Switzerland, Thailand, Netherlands, Australia, Indonesia, China, Singapore, Africa, United Kingdom, Nepal, New Zealand, Brazil, Canada, the Caribbean Isles, Denmark, Scotland, France, Southeast Asia, Bangladesh, Romania, Viet Nam, and among the FAO-OIE-WHO. In May 2015 the World Veterinary Association, World Medical Association and Spanish Veterinary and Medical Associations held a joint One Health Conference in Madrid. A newly formed International [One Health Platform Foundation](#) has recently been formed and is overseeing a [One Health Journal](#) within Elsevier publishing company.

In the U.S., working since 2008 to advance the One Health paradigm shift both in the U.S. and around the world, is the [One Health Initiative Website](#). Led by Dr. Bruce Kaplan of Sarasota, Florida, this group of individuals is comprised of two nationally and internationally known One Health leader physicians, two veterinarians and a prominent health scientist/epidemiologist. This group consistently and efficiently provides ongoing grassroots One Health publications and information dissemination.

Efforts of the One Health Commission

Also in the U.S., the [One Health Commission](#) (OHC), a 501c3 non-profit, non-governmental organization (NGO), was organized in 2009 as the result of a partnership between the American Veterinary Medical Association (AVMA) and the American Medical Association (AMA). The resulting 'One Health Initiative Task Force' recommended creation of an organization that would actively promote One Health (see [Executive Report of the Task Force](#)). Today the Commission works to enhance collaborations among physicians, veterinarians, public, plant, environmental and other local/global health professionals and to increase public awareness of the interconnectedness of people, animals and the environment. It operates under the slogan 'Connect, Create, Educate' as it strives to connect One Health stakeholders to create teams and networks that will educate about One Health issues and the need for the One Health paradigm shift. Based first briefly in Kansas (2010), then for three years at Iowa State University, the Commission's headquarters were moved to the Research Triangle Park region of North Carolina ([See press release](#)) in early 2014. It is governed by a [Board of Directors](#) comprised of representatives from organizations that financially sponsor

its work at a 'Leader' level and that includes Students for One Health representatives. The Commission is also supported financially by individual and corporate donations as it strives to establish sustainable One Health collaborations.

The Commission oversees significant One Health 'Actions' by identifying and facilitating volunteer One Health Action Teams. Financial sponsorship is *not* required to participate on these Teams. A 'few' of these team efforts include:

- 'Connect' - First International Who's Who in One Health Webinar The One Health Commission was pleased to host the [1st International Who's Who in One Health Webinar](#) on November 10, 2014. Running for 8 hours on line, this Webinar brought together noted One Health leaders, advocates, professionals and students in real-time to discuss global One Health efforts while providing a forum for dialogue within and across disciplines. There was no cost to attend the Webinar but participants had to register in advance. Total attendance was estimated at 1007 individuals from 41 countries. Of those, 51.4% represented the animal health domain, 18.1% the human health domain, and 2.8% the environmental health domain; 42.6% were from academia, 19.1% from government, 13.1% from not-for-profit organizations and 8.4% from private, for-profit organizations.



You can view the [Webinar program](#) and listen to speaker presentations on the OHC website. Look for the link on the home page in the orange box to the right.

- 'Connect' - Students for One Health Early in 2014 the Commission was able to connect many students who work for One Health at their respective academic institutions. They now have an extensive *Students for One Health* listserv. Once connected, they immediately formed a [Students for One Health Facebook](#) page and [Future Leaders of One Health LinkedIn](#) pages. On March 30, 2015, the Commission provided online support for the first Students for One Health meeting with 24 schools from 6 countries participating including the U.S., Netherlands, Brazil, and Nepal, to name a few. The OHC plans to become a parent organization for Student One Health Chapters in the U.S. and beyond and seeks to hold a Student One Health Congress that includes students from human, animal, plant and environmental domains. At the March 30 meeting the Commission released a call for nominations for 2-3 voting Students for One Health representatives on its Board of Directors.
- 'Connect' - 'Bringing the Environment into One Health' – "Connect" This new team is in development

- *'Connect, Educate'* - Professional CE/CME Team This group is creating a 3-5 session, multidisciplinary CE/CME webinar series on One Health Issues titled "Significance of One Health for Veterinary and Human Health Practitioners". This series is targeted jointly to human and veterinary 'clinical' health practitioners. The first two proposed topics include 'Asthma and Allergies in People and Pets- Environmental Influences' and 'Bartonellosis: One Health Perspectives on an Emerging Infectious Disease of Animals and Humans." The idea is to get both disciplines on the same webinar to help them realize the many overlaps in their work.
- *'Connect, Educate'* - IOM Workshop/Study Team This team is working to facilitate an IOM (now called the National Academies of Medicine) study or workshop on gaps in One Health Education in professional health education across Veterinary, Human, Public Health and Environmental Health educational settings.
- *'Educate'* - Bat Rabies Educational Posters In summer 2013, the Commission partnered with the Global Alliance for Rabies Control (GARC) and Bat Conservation International (BCI) to develop free to download, bat rabies educational posters that are now circulating around the world for [children](#) and [adults](#) (also available in [Spanish](#), and [Portuguese](#)). A One Health Education Team is now working to distribute these posters to U.S. schools and post them on hiking trails and in other public places and countries where bat rabies is a problem.
- *'Educate'* - Communications / Public Service Announcements Team - This multidisciplinary team is creating a series of One Health Public Service Announcement (PSA) radio shorts that will be aired around the U.S. The first one 'What is One Health' can be heard on the OHC website in [English](#) and Spanish and is ready for distribution to radio stations.
- *'Connect, Educate'* Website Support Team This team supports the OHC in gathering and posting up to date information on the website Library in both 'popular media -One Health in the News' and scientific publications. These team members are also involved with the 2015 website expansion creating a strong site for One Health activities and information around the globe.
- Additional Future Teams are under development

Finally, if you visit the OHC web site ['Resources'](#) page, you will observe down the left side of the page a 'Who's Who' of One Health stakeholders. These are groups/organizations from around the world who are actively working to further One Health (note: they are *not* all financial 'sponsors' of the Commission). This list is currently incomplete. As part of its reach out to 'Connect' One Health stakeholders, the Commission is continually adding to it and invites any active One Health groups to complete and submit their information to be highlighted on this page.